

Remarks

The Examiner objected to claim 10 as containing subject matter which was not described in the specification in such a way so as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Applicant has corrected this in the amended claims submitted herewith. Applicant believes that the submitted claims fulfill the statutory requirements. Thus, no further correction is needed.

The Examiner also objected to the drawings as being defective for not showing every feature of the invention specified in the claims. Applicant has corrected this in the amended claims submitted herewith. Applicant believes that the amended claims fulfill the statutory requirements. Thus, no further correction is required.

On page 3 of the Office Action, the Examiner rejected claim 5 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which Applicant regards as the invention. Claim 5 has been cancelled, and thus no further correction is required. Accordingly, the claims should be in condition for allowance.

Rejections under 35 U.S.C. § 102

On page 3 of the Office Action, the Examiner rejected claims 1-3, 5-8, 10, and 13-17 under 35 U.S.C. § 102(b) as being anticipated by Saiz (6,082,668). Applicant respectfully traverses this rejection.

Saiz '668 discloses an improvement to aircraft and high speed vehicles, consisting of setting the vehicle nose in an upward inclination with a flat wall on the bottom which, running

from the underside of the fuselage, is inclined forward until its upper zone. The inclined wall exploits the frontal incident air to create lift and, because of the angle which it forms, frontal drag is the same as that of a conventional vehicle fuselage, having the tail inclined downward with a flat wall in the upper part running from the top of the fuselage and sloping backwards as far as its bottom area, to exploit the suction of the rear air to create major lift and, because of its angle, the tail drag is the same as that of a conventional vehicle.

Applicant respectfully asserts that independent claim 1 of the application is patentably distinguishable over the Saiz '668 reference. In order for a reference to anticipate a claim, the reference must teach every element of the claim. In the instant application, claim 1 recites:

1. An aerodynamic profile, comprising:

a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift;

a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and

wherein said profile reduces drag and substantially reduces separation of the boundary layer.

Saiz '668 does not anticipate claims 1-3, 5-8, 10, and 13-17 because it does not show the use of an aerodynamic profile covered by "a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said

profile reduces drag and substantially reduces separation of the boundary layer." Rather, Saiz '668 discloses using an elongated fuselage having a tail portion to create lift and reduce drag, with the nose and tail arranged in the same inclination. There is no disclosure to use a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer. Therefore, Saiz '668 does not anticipate claims 1-3, 5-8, 10, and 13-17.

Further, Saiz '668 does not render the present claims 1-3, 5-8, 10, and 13-17 obvious because it teaches away from the claimed invention. The claims of the instant application recite an aerodynamic profile covered by a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer. Applicant discloses that the aerodynamic profile of the present invention, including a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer, ensures that boundary layer separation is eliminated or minimized and provides high efficiency (saving fuel) while allowing greater angles of attack of the front

surface (see page 4, lines 12-16). Thus, Saiz '668's disclosure of a vehicle nose in an upward inclination with a flat wall on the bottom which, running from the underside of the fuselage, is inclined forward until its upper zone is contrary to the claimed invention.

Additionally, with respect to Figure 5, Saiz '668 discloses an improvement to aircraft and high speed vehicles, consisting of setting the vehicle nose in an upward inclination with a flat wall on the bottom which, running from the underside of the fuselage, is inclined forward until its upper zone. The inclined wall exploits the frontal incident air to create lift and, because of the angle which it forms, frontal drag is the same as that of a conventional vehicle fuselage, having the tail inclined downward with a flat wall in the upper part running from the top of the fuselage and sloping backwards as far as its bottom area, to exploit the suction of the rear air to create major lift and, because of its angle, the tail drag is the same as that of a conventional vehicle. Again, the improvement of Saiz '668 cannot be arranged into the aerodynamic profile of Applicant's invention. The aerodynamic profile, as illustrated in Figure 1 of the present invention, discloses an aerodynamic profile quite different from the improvement discussed in Saiz '668.

Therefore, since Saiz '668 fails to teach or disclose the use of a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer Applicant respectfully submits Saiz '668 does not anticipate or render obvious

any of the pending claims. Accordingly, claims 1-3, 5-8, 10, and 13-17 are allowable in view of this reference and Applicant respectfully requests a withdrawal of this rejection.

Rejections under 35 U.S.C. § 103

On page 4 of the Office Action, the Examiner has also rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Saiz '668 in view of Loedding (2,503,585), claims 9 and 11-12 under 35 U.S.C. § 103(a) as being unpatentable over Saiz '668, and claims 18-19 under 35 U.S.C. § 103(a) as being unpatentable over Saiz '668 in view of Saiz (6,378,803).

Applicant respectfully traverses the rejections. Applicant respectfully submits that the combination of these references is not proper, as the references do not provide a motivation to combine them. Even if properly combined, the combination does not render the claims obvious. At the outset, there is no motivation within the references to combine them. Saiz '668 discloses an improvement to aircraft and high speed vehicles, consisting of setting the vehicle nose in an upward inclination with a flat wall on the bottom which, running from the underside of the fuselage, is inclined forward until its upper zone. The inclined wall exploits the frontal incident air to create lift and, because of the angle which it forms, frontal drag is the same as that of a conventional vehicle fuselage, having the tail inclined downward with a flat wall in the upper part running from the top of the fuselage and sloping backwards as far as its bottom area, to exploit the suction of the rear air to create major lift and, because of its angle, the tail drag is the same as that of a conventional vehicle.

The Examiner states that it would be obvious to take the leading edge of Saiz '668 with the movable lip spoiler of Loedding to arrive at Applicant's invention (Office Action, page 4). However, there is no motivation to seek an improvement in the leading edge for Saiz

'668, which discloses a vehicle nose in an upward inclination with a flat wall on the bottom which, running from the underside of the fuselage, is inclined forward until its upper zone. In particular, Saiz '668 fails to disclose either a movable lip spoiler or a lip in a movable arrangement at the leading edge. Thus, there is no motivation to combine the leading edge of Saiz '668 with the movable lip spoiler of Loedding, as the combination would result in a leading edge that is contrary to the disclosure of Saiz '668 to have a rounded leading edge. Therefore, these references teach away from combining them.

Further, Applicant submits that the leading edge of Saiz '668 would result in a leading edge that lacks rounding in favor a leading edge with a movable lip spoiler. Therefore, Saiz '668 fails to provide an enabling disclosure for a movable lip spoiler and does not provide sufficient disclosure for providing a lip arranged to be movable. Applicant's invention, and specifically the combined use of a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer, shows a dramatically improved aerodynamic profile when compared with the leading edge disclosed in Saiz '668.

Even if these references were properly combinable, Saiz '668 alone or in combination with Loedding does not disclose or render obvious Applicant's invention. Specifically, this combination of references and the reasons given by the Examiner for the combination do not disclose what is required by the Applicant's claims – a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on

a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer. This combination also does not teach or suggest a profile expressly or inherently having the claimed requirements of Applicant's aerodynamic profile. It is advantageous to provide an aerodynamic profile that includes a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer. One advantage to using the aerodynamic profile of the present invention is that the boundary layer separation is eliminated or minimized. (Page 4, lines 12-16).

Another advantage is that high fuel efficiency is attained. (Page 4, line 12-16). Still another advantage is that the aerodynamic profile provides for greater angles of attack of the front surface. (Page 4, lines 12-16). The improvement of Saiz '668 could not be used to provide such advantages resulting from the use of a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer. Thus the improvement of Saiz '668 is unsuitable.

The Examiner further states that it would be obvious to make the skin of Saiz '668 out

of flexible fabric to arrive at Applicant's invention (Office Action, page 4). However, there is no motivation to seek an improvement in the skin of Saiz '668, which discloses a vehicle nose in an upward inclination with a flat wall on the bottom which, running from the underside of the fuselage, is inclined forward until its upper zone. In particular, Saiz '668 fails to disclose either a flexible fabric or any flexibility in a skin arrangement. Thus, there is no motivation to combine the skin of Saiz '668 with a flexible fabric, as the combination would result in a skin that is contrary to the disclosure of Saiz '668 to have a fuselage with edges or sharp angles rounded. Therefore, these references teach away from combining them, and Saiz '668 fails to provide an enabling disclosure for flexible fabric and does not provide sufficient disclosure for providing skin with flexible fabric. Applicant's invention, and specifically the use of a flexible fabric, shows a dramatically improved aerodynamic profile when compared with the improvement disclosed in Saiz '668.

Even if these references were properly combinable, Saiz '668 does not disclose or render obvious Applicant's invention. Specifically, this combination of references and the reasons given by the Examiner for the combination do not disclose what is required by the Applicant's claims – a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer. This combination also does not teach or suggest a profile expressly or inherently having the claimed requirements of Applicant's aerodynamic profile. It is advantageous to provide an aerodynamic profile that includes a first

zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer. One advantage to using the aerodynamic profile of the present invention is that the boundary layer separation is eliminated or minimized. (Page 4, lines 12-16).

Another advantage is that high fuel efficiency is attained. (Page 4, line 12-16). Still another advantage is that the aerodynamic profile provides for greater angles of attack of the front surface. (Page 4, lines 12-16). The improvement of Saiz '668 could not be used to provide such advantages resulting from the use of a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer. Thus the improvement of Saiz '668 is unsuitable.

On page 4 of the Office Action, the Examiner rejected claims 18-19 under 35 U.S.C. § 103(a) as being anticipated by Saiz '668 in view of Saiz (6,378,803).

Applicant respectfully traverses this rejection. Applicant respectfully submits that the combination of these references is not proper, as the references do not provide a motivation to combine them. Even if properly combined, the combination does not render the claims obvious. At the outset, there is no motivation within the references to combine them. Saiz '668 discloses an improvement to aircraft and high speed vehicles, consisting of setting the

vehicle nose in an upward inclination with a flat wall on the bottom which, running from the underside of the fuselage, is inclined forward until its upper zone. The inclined wall exploits the frontal incident air to create lift and, because of the angle which it forms, frontal drag is the same as that of a conventional vehicle fuselage, having the tail inclined downward with a flat wall in the upper part running from the top of the fuselage and sloping backwards as far as its bottom area, to exploit the suction of the rear air to create major lift and, because of its angle, the tail drag is the same as that of a conventional vehicle.

The Examiner states that it would be obvious to make the profile of Saiz '668 with the fuselage cross-sections of Saiz '803 to arrive at Applicant's invention (Office Action, page 4). However, there is no motivation to seek an improvement in the skin of Saiz '668, which discloses a vehicle nose in an upward inclination with a flat wall on the bottom which, running from the underside of the fuselage, is inclined forward until its upper zone. Saiz '803 discloses a trapezoid and oval transverse cross-sections of fuselage. In particular, Saiz '668 fails to disclose either a trapezoidal or oval fuselage cross-section. Thus, there is no motivation to combine the profile of Saiz '668 with the non-inclined front zone cross-sections of Saiz '803, as the combination would result in a profile with a nose having non-inclined front surface cross-section. Therefore, these references teach away from combining them.

Further, Applicant submits that the profile of Saiz '668 would result in a profile that lacks a nose having an upward inclination in favor of a non-inclined front surface cross-section. Therefore, Saiz '668 fails to provide an enabling disclosure for a trapezoidal or oval cross-section and does not provide sufficient disclosure for providing a non-inclined nose with an upward inclination arranged to generate lift. Applicant's invention, and specifically

the combined use of an inclined front surface with a positive angel arranged to generate lift, shows a dramatically improved aerodynamic profile when compared with the improvement disclosed in Saiz '668.

Even if these references were properly combinable, Saiz '668 alone or in combination with Saiz '803 does not disclose or render obvious Applicant's invention. Specifically, this combination of references and the reasons given by the Examiner for the combination do not disclose what is required by the Applicant's claims – a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer. This combination also does not teach or suggest an aerodynamic profile expressly or inherently having the claimed requirements of Applicant's aerodynamic profile. It is advantageous to provide an aerodynamic profile that includes a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer. One advantage to using the aerodynamic profile of the present invention is that the boundary layer separation is eliminated or minimized. (Page 4, lines 12-16).

Another advantage is that high fuel efficiency is attained. (Page 4, line 12-16). Still another advantage is that the aerodynamic profile provides for greater angles of attack of the

front surface. (Page 4, lines 12-16). The improvement of Saiz '668 could not be used to provide such advantages resulting from the use of a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer. Thus the improvement of Saiz '668 is unsuitable.

The Examiner has failed to establish a prima facie case for obviousness of claims 4, 9, 11-12, and 18-19. It is the Examiner's burden to show that the prior art relied upon coupled with the knowledge generally available in the art at the time of the invention must contain a suggestion or incentive that would have motivated one of ordinary skill in the art to combine references. As Applicant has set forth throughout this response, the distinctive differences between the individual references makes the combination of these references implausible. The Examiner must also show that the proposed combination must have a reasonable expectation of success. It is inappropriate for the Examiner to use the present application as a motivation to combine the references. This inappropriate combination, taking bits and pieces from each reference in an attempt to create Applicant's invention, is exactly what the Examiner has done with these references.

Therefore, since Saiz '668, in view of Loedding or Saiz '863 fails to teach or disclose an aerodynamic profile, including a first zone on a front surface of said profile, wherein said first zone is inclined at a positive angle to generate lift; a second zone on a rear surface adjacent to said front surface, wherein said second zone is faired or streamlined, formed by at

least two surfaces and hollow, which does not generate lift; and wherein said profile reduces drag and substantially reduces separation of the boundary layer, Applicant respectfully submits it does not anticipate or render obvious any of the pending claims.


Thus, Applicants respectfully request reconsideration and withdrawal of the § 103 rejection as to these claims.

Conclusion

Having analyzed the rejections cited against the claims, it is urged that the present claims are in condition for allowance. A favorable reconsideration is requested. The Examiner is invited to contact the undersigned attorney to discuss any matters pertaining to the present application.

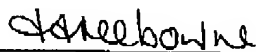
Respectfully submitted,

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